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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/612,548	07/07/2000	Hiromi Shikata	040679/1099	9368

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3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER

LE, BRIAN Q

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 04/04/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

09/612,548

Applicant(s)

SHIKATA, HIROMI

Examiner

Brian Q Le

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other:

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, and 6-7, and 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Hashima U.S. Patent No. 6,115,505.

Regarding claim 1, Hashima teaches a method of recognizing an object (Abstract) based on pattern matching (FIG. 1, element 180) using a gray-scale (FIG. 9) normalized correlation method (FIG. 1, elements 140 and 150; column 7, lines 57-66; column 8, lines 1-14; column 1, line 67 and column 2, lines 1-17), comprising the steps of:

Storing a reference image including a foreground and a background, said foreground and said background each having a predetermined value of density distribution (FIG. 5; column 1, lines 59-62 and column 7, lines 3-23 and 39-45);

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Inputting an image of the object (FIG. 1, element 110) said image including a foreground and a background, said foreground and said background each having a predetermined average value of density distribution (column 1, lines 63-67);

Storing a function for giving said predetermined values of density distribution of said reference image equal to said predetermined average values of density distribution of said input image, respectively (column 15, lines 29-34); and

Obtaining a maximum normalized correlation coefficient between said reference image and said input image using said function (column 16, lines 27-30).

Referring to claim 6, Hashima teaches the method wherein said maximum normalized correlation coefficient is obtained from simple summation of a cross-correlation coefficient (column 8, lines 1-5).

For claims 7, please refer back to claims 1 for the explanation.

Referring to claim 10, Hashima teaches the method wherein said maximum normalized correlation coefficient is calculated in excluding a term of a background of said reference image from an equation of an autocorrelation coefficient (column 9, lines 39-49) of each of said reference image and said input image and an equation of a cross-correlation coefficient between said reference image and said input image (column 8, lines 1-5).

For claim 11, please refer back to claim 6.

For claim 12, please refer back to claim 1. In addition, Hashima teaches a medium for recording (column 1, line 60) a computer program (column 13, line 40) to process the limitations in claim 12.

Regarding claim 13, please refer back to claim 12 and claim 1 for further explanation.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-5, and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashima U.S. Patent No. 6,115,505.

Regarding claims 2 and 3, Hashima does not teach a concept of high predetermined value of density function distribution represents foreground, low predetermined value of density function distribution represents background and vice versa. The Examiner takes Official Notice that it is well known to represent foreground or background using either high or low predetermined value of density function distributions. Use of a particular predetermined value of density function distribution for foreground or background is arbitrary, and would be based upon designer preference.

Regarding claim 4, Hashima teaches a method wherein said function is obtained by designating a pattern of said reference image (column 1, lines 60-65), overlaying (superimpose) (column 9, lines 31-40) an image of said pattern on said input image, and designating one of a predetermined average value of density distribution of said image and a predetermined value of density of said image (column 4, lines 1-13 and column 8, lines 48-65).

For claim 5, Hashima teaches the method wherein said function is obtained by extracting (cutting out) an outline of the object, overlaying an image of said outline on said input image,

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and designating one of a predetermined average density distribution of said image and a predetermined value of density of said image (column 8, lines 15-65).

For claims 8 and 9, please refer back to claims 4 and 5 respectively for the explanation.

### *CONCLUSION*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to pattern matching, object recognition, image foreground, and image background:

U.S. Pat. No. 5,734,747 to Vaidyanathan, teaches iterative method and system of identifying valid objects in a background of an image.

U.S. Pat. No. 6,385,340 to Wilson, teaches vector correlation system for automatically locating patterns in an image.

U.S. Pat. No. 5,790,702 to Yoshimura, teaches high speed pattern recognition system.

U.S. Pat. No. 6,389,163 to Jodoin, teaches method for automatic image segmentation using template matching filter.

U.S. Pat. No. 5,060,282 to Molley, teaches optical pattern recognition method implementing the mean-square error correlation algorithm.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q Le whose telephone number is 703-305-5083. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC Customer Service whose telephone number is 703-306-0377.

BL

April 3, 2003

  
Jon Chang  
Primary Examiner